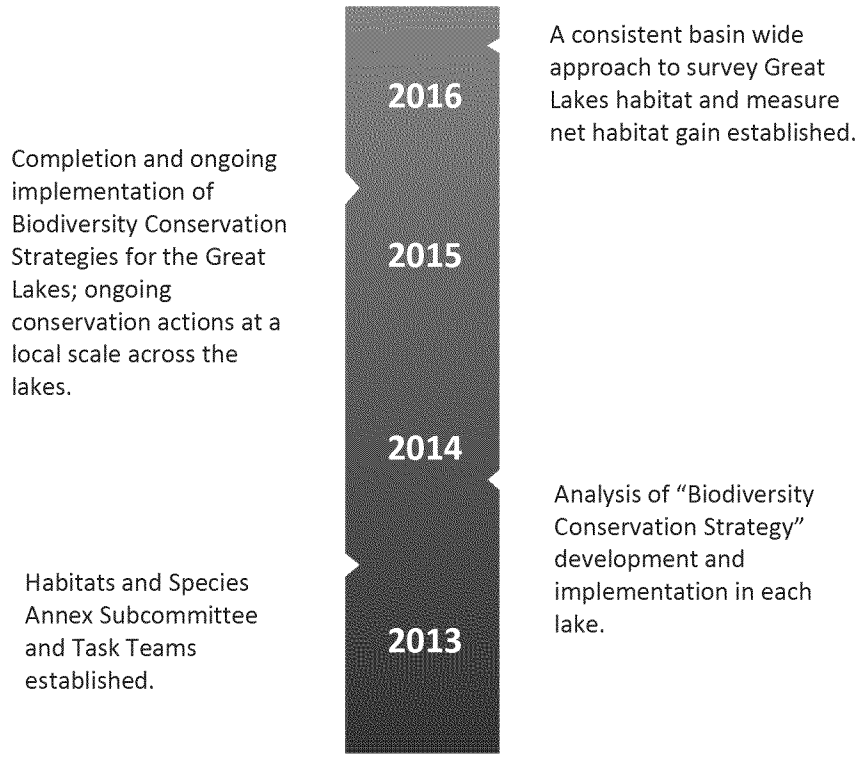
HABITAT AND SPECIES ANNEX

OVERVIEW

The Great Lakes basin is a vast freshwater system consisting of a wide range of habitats from sand dunes and rocky shorelines to wetlands and shoals. These habitats are home to great wealth of biodiversity including many globally rare species. This diversity is an important resource to the region providing ecological services that contribute daily to the wellbeing of the Great Lakes basin residents. Protection of the habitat is an important component of managing the Great Lakes. The 2012 GLWQA commits Canada and the United States to conserve, protect, maintain, restore and enhance the resilience of native species and their habitats, as well as support essential ecosystem services. Actions taken by the Parties are contributing to the recovery of populations of species at risk, the restoration of degraded habitat and the conservation of native species.

PROGRESS TOWARD MEETING GLWQA COMMITMENTS

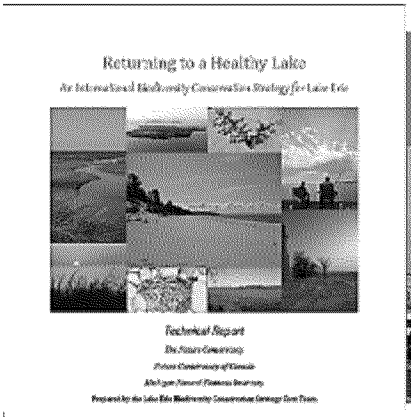


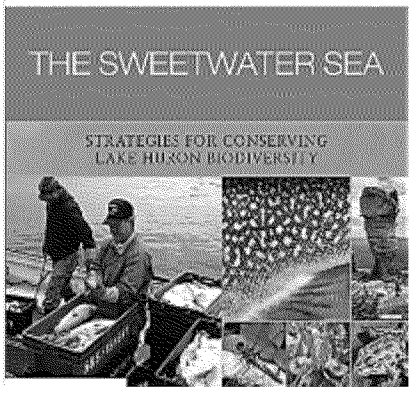
This Annex's implementation is supported by the Habitat and Species Annex Subcommittee, co-led by Environment and Climate Change Canada and the United States Fish and Wildlife Service. Organizations on the subcommittee include: [Confirm and insert logos from: Environment and Climate Change Canada; United States Fish and Wildlife Service; United States Environmental Protection Agency; United States National Oceanic and Atmospheric Administration; United States Geological Survey; Parks Canada; Ontario Federation of Anglers and Hunters; New York State Department of Environmental Conservation; Ontario Ministry of Natural Resources and Forestry; Michigan Department of Natural Resources; United States National Park Service; Indiana Department of Environmental Management; Wisconsin

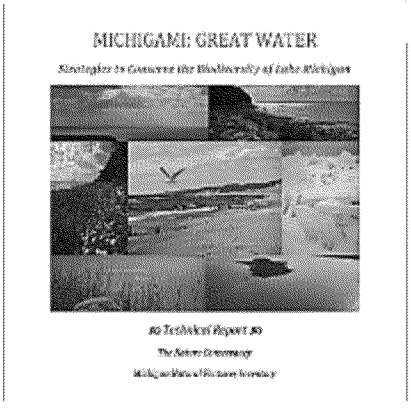
Department of Natural Resources; United States Army Corps of Engineers; Great Lakes Fishery Commission; Fisheries and Oceans Canada.]

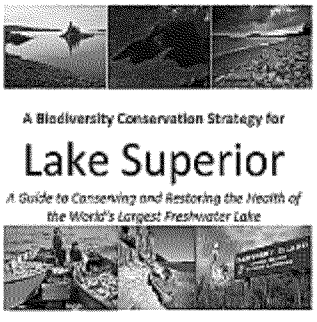
BINATIONAL ACTIONS TAKEN

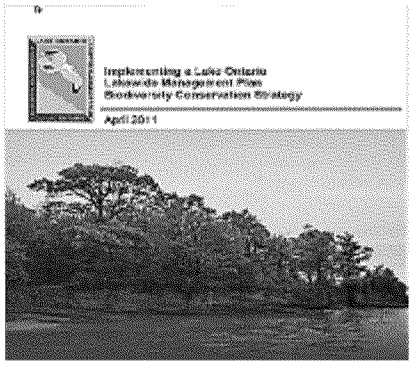
By 2015, develop Biodiversity Conservation Strategies for all of the lakes, including connecting channels, and begin implementing priority actions identified in the Strategies through existing programs and agreements.











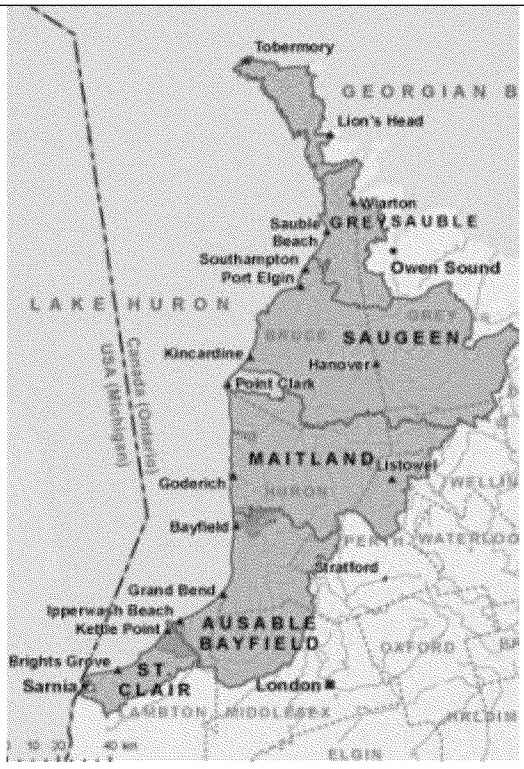
- Lakewide habitat and species protection and restoration conservation strategies, also called Biodiversity Conservation Strategies (Strategies), were developed for all five of the Great Lakes as of February 12, 2015. The Strategies assess the status and threats to lakewide biodiversity and recommend conservation priorities for native species and their habitats. The Executive Summaries are available on binational.net (www.binational.net/2015/02/23/habitat-and-species-strategies).

- Each Strategy is a product of extensive Lakewide collaboration among regional and local stakeholders. They serve as tools to foster and guide shared implementation of priority conservation actions among federal, state, provincial, tribal, academic, municipal and watershed management agencies. Adaptive management is applied to the planning, application and implementation of the Strategies across the lakes.

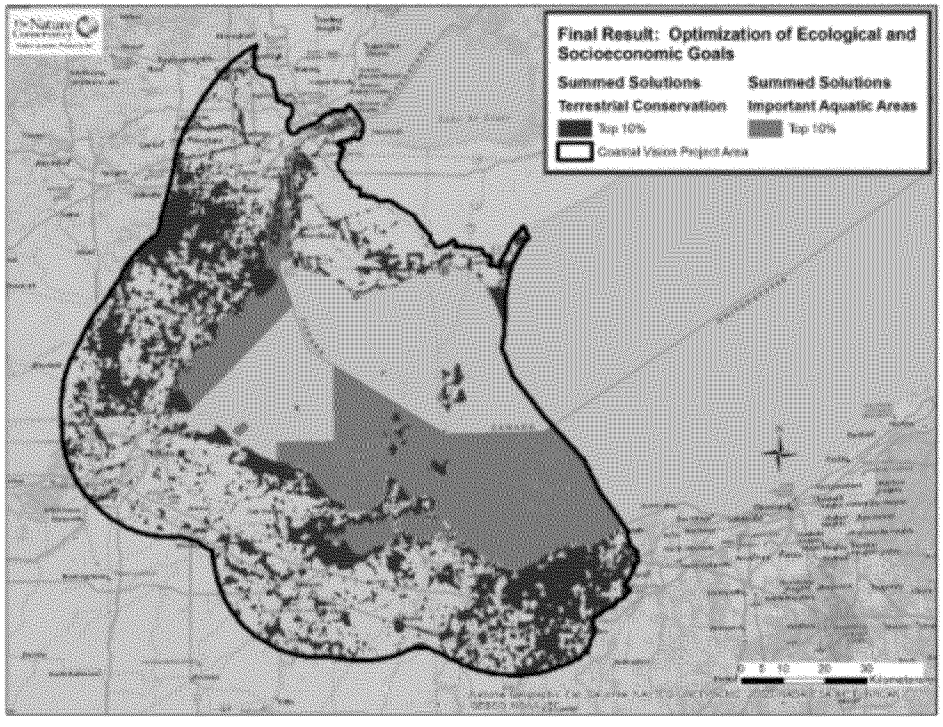
- The Lake Superior Partnership is currently preparing watershed-level plans to further guide and

support implementation of the recently released (2015) Biodiversity Conservation Strategy at a local level. The Lake Ontario Partnership used the broader Lake Ontario Biodiversity Strategy to produce an implementation plan to focus effort on priority actions. Other Lake Partnerships are promoting implementation by identifying regional scale and watershed based biodiversity objectives and outlining the specific actions required to address habitat and species issues on a sub-basin scale.

- Table X illustrates several examples of how the Strategies are being used in each lake basin to inform and implement priority conservation actions.

Lake Huron: Healthy Lake Huron Healthy Lake Huron is a team of dedicated Canadian environmental professionals who coordinate actions aimed at improving overall water quality along the southeast shores of Lake Huron. Healthy Lake Huron is taking actions to address the issue of non-point source pollution, which has been identified as a critical threat in their Biodiversity Conservation Strategy.	 Membership of the Healthy Lake Huron group (www.healthylakehuron.ca)
Lake Superior: Superior Streams The Lake Superior Biodiversity Conservation Strategy classified dams and barriers as a high threat to meeting biodiversity targets. Dams and barriers are also critical in prevention of spread of aquatic invasive species. For example, the pictured dam on the Black Sturgeon River is identified as limiting Lake Sturgeon	

and Walleye spawning habitat but is also critical preventing significant Sea Lamprey infestation. Critical work on understanding these trade-offs is underway by Lakehead University and by the Aquatic Habitat Connectivity Collaboration supported by the Great Lakes Fishery Commission. Decisions about maintaining or removing dams require engagement with all stakeholders and Indigenous peoples to help ensure that all views and objectives are considered.	 The Camp 43 Dam on the Black Sturgeon River, Ontario (Photo Credit: Ontario Ministry of Natural Resources and Forestry)
Lake Ontario: Bloater Fish Stocking In Lake Ontario, the Binational Lake Partnership identified the restoration of native preyfish species as a priority for the implementation of the Biodiversity Conservation Strategy. Canadian and United States agencies have initiated a program to reintroduce bloater to the lake in 2012. The program is ongoing, and nearly 62,000 bloaters were released in November, 2015.	 Dale Hanson from the Green Bay Fish and Wildlife Conservation Office assists with bloater egg collection (Photo Credit: United States Fish and Wildlife Service)
Lake Michigan: Lake Herring Restoration Restoration of the native	

Lake Herring is a priority identified in the Lake Michigan Biodiversity Conservation Strategy. To help restore the species to its historical status as a primary prey fish in Lake Michigan, the Little Traverse Bay Bands of Odawa Indians released nearly 50,000 summer fingerling and 8,000 fall fingerling into Little Traverse Bay, Michigan, in 2014. The Little Traverse Bay Bands of Odawa Indians is currently evaluating the success of the fingerling releases.	Lake Herring (Photo Credit: United States Environmental Protection Agency)
Lake Erie: Western Basin Conservation Vision Targets and goals from the Lake Erie Biodiversity Conservation Strategy were used in the development of a regional implementation plan called the Western Basin Conservation Vision. This plan identifies and maps areas to focus local conservation investments to meet regional conservation goals.	 Final Results of the Optimization of Ecological and Socioeconomic Goals (https://www.conservationgateway.org/ConservationByGeography/NorthAmerica/wholesystems/greatlakes/coasts/wle/Pages/default.aspx)

Conducting a baseline survey of the existing habitat against which to establish a Great Lakes Basin Ecosystem target of net habitat gain and measure future progress

- The Parties released a draft report titled *Conducting A Baseline Survey of Great Lakes Habitat: Assessing and Measuring Progress toward a Great Lakes Ecosystem Target of Net Habitat Gain,* released in May 2016, identifying an approach to measure baseline conditions of habitat and monitor change over time. The report was developed with support from experts and partners around the lakes through a series of binational workshops, meetings and webinars.

- The Baseline Survey approach is built upon existing Great Lakes monitoring programs and emphasizes the use of remotely sensed information for maximum data coverage. The physical characteristics of the lakes will be used to map different habitat types and the condition of the habitats will then be assessed. The baseline survey will be conducted on a reoccurring basis to track changes in the ecosystem over time and to monitor progress.

DOMESTIC ACTIONS TAKEN

- Canada and Ontario have multiple programs that contribute to the ongoing goals of the Habitats and Species Annex. In addition, there are many non-governmental partners making significant contributions to habitat and species conservation, including the Nature Conservancy of Canada, Conservation Ontario and the many individual Conservation Authorities in the province, the Ontario Federation of Anglers and Hunters, Ducks Unlimited, and Stewardship Councils.

    - Environment and Climate Change Canada's National Wetland Conservation Fund, which was launched in 2014, is a $50 million funding program intended to support on-the-ground activities that will restore drained, degraded or lost wetlands across the country. Funding support has been provided to 39 projects in the Great Lakes basin, supporting actions that restore, protect, and conserve habitats for waterfowl, waterbirds and shorebirds. In the 2014 to 2015 fiscal year, 135 hectares of wetland habitat were restored and 6,440 hectares of wetland habitat were enhanced.
    - The Lake Superior National Marine Conservation Area Legislation received Royal Assent in 2015, which is a significant step in establishing one of the world's largest fresh water marine protected areas. The Lake Superior National Marine Conservation Area encompasses a 10,800 square kilometer area of the biologically diverse lake and includes lakebed, islands, and shore lands. This project contributes to Canada's commitment to conserve the countries' land and waters and meet Aichi 2020 biodiversity targets to protect 17% of land and inland waters. The Lake

Superior National Marine Conservation Area Interim Management Plan was released in January 2016 (http://www.pc.gc.ca/eng/amnc-nmca/on/super/plan/interim-provisoire.aspx).

- In 2015, the Ontario Eastern Habitat Joint Venture (OEHJV) published a revised Implementation Plan which defines the objectives, priorities, programs and actions that Ontario EHJV partners will work to achieve between 2015 and 2020 to conserve wetlands and migratory bird habitat in Ontario. Environment and Climate Change Canada supports OEHJV partners in the implementation of priority conservation programs, with a particular focus on wetlands and associated habitats identified within Ontario EHJV Priority Habitat Conservation Areas.
- Environment and Climate Change Canada completed biodiversity and aquatic habitat monitoring at more than 40 Great Lakes coastal wetlands each year, including surveys on fish, marsh birds, aquatic invertebrates, vegetation, and water quality. Additionally, Environment and Climate Change Canada developed GIS mapping products to support reporting of Great Lakes Basin biodiversity.
- The Government of Canada's Ecological Gifts program provides a way for Canadians with ecologically sensitive land to protect nature through donations of land, or a partial interest of land, for conservation in exchange for significant tax benefits. In the 2015 to 2016 year alone 26 Ecological Gifts were completed in the Great Lakes Basin for total of 1,247.48 hectares valued at $8,853,800.
- The Province of Ontario is implementing a Land Stewardship and Habitat Restoration Program. Since its 2013 launch, the program's $300,000 annual fund has helped improve, restore or create more than 4,662 acres of habitat including plantings of over 105,000 trees and shrubs, supporting the hiring of 182 people and leveraging over $2.3 million in project-partner funding.
- Fisheries and Oceans Canada supports habitat restoration and enhancement through its Recreational Fisheries Conservation Partnerships Program. The program was established in June 2013 to support multi-partner projects at the local level aimed at restoring recreational fisheries habitat in order to enhance the sustainability and productivity of Canada's recreational fisheries.

- In the United States, multiple federal and state agencies, as well as local and regional conservation entities, non-governmental organizations, and myriad conservation partners conduct a wide range of activities related to fish, wildlife and habitat. Many of these activities support goals and priorities of the Habitats and Species Annex. In addition to base-funded activities conducted by federal agencies, the Great Lakes Restoration Initiative (GLRI) has boosted funding in recent years to supplement agency budgets to allow them to pursue high priority conservation and restoration needs throughout the Great Lakes Basin, including fish and wildlife habitat.

- In 2015, GLRI agencies and their partners implemented 57 habitat and species projects resulting in more than 875 habitat and species projects underway or completed since the 2010 inception of the GLRI. Ten 2015 GLRI projects were directed towards protecting, restoring, and enhancing Piping Plover habitats. Over 40 projects have improved conditions for numerous federally and non-federally listed species in the Great Lakes such as Lake Sturgeon.

- GLRI funding implemented protection, restoration and enhancement projects that have reopened over 3,800 miles of Great Lakes tributaries, and increased aquatic connectivity for numerous fish species. Additionally, more than 36,000 acres of habitat in targeted watersheds were protected, restored and enhanced in order to sustain Great Lakes habitats and species populations. 300 miles of Great Lakes shoreline and riparian corridors, and 7,000 acres of Great Lakes coastal wetlands were protected, restored, and enhanced in 2015 alone.

- GLRI partners have completed the removal of the Cass River Dam during 2015. The dam at Frankenmuth, Michigan initially blocked the passage of fish to more than 1,700 miles of upstream spawning habitat on the Cass River and connecting tributaries since it was built in the 1850s. It is now placed with a rock ramp with a series of rock weirs to allow passage of fish species, such as walleye and lake sturgeon. Fourteen separate weirs and adjacent "resting pools" have been constructed over a span of approximately 350 feet to provide a roughly 3% grade for non-jumping targeted species.

- In 2015, GLRI partners reconnected the previously isolated Ottawa National Wildlife Refuge wetlands to Crane Creek and Lake Erie in Ohio. For the first time since the 1940s, the reconnected wetlands now function as a productive spawning ground and nursery area. Less than one week after re-establishing connectivity, Longnose Gar were found spawning in one of the pools. Thirteen species of fish not previously found entered through the structure and actively use the reconnected wetlands.

- The Fond du Lac Band of Lake Superior Chippewa developed better ways to control water levels and protect sustainable wild rice populations with GLRI funds. Projects included water control structures, beaver dam removals and channel obstruction removal that resulted in the protection of 855 acres of ecologically and culturally important wild rice habitat on the Fond du Lac Reservation in northeastern Minnesota. Federal partners and local Chippewa removed 97 acres of competing aquatic plan species from Big Rice Lake and 59 acres of aggressive perennial vegetation from Perch Lake. In the St. Louis River Estuary partners reseeded 121 acres with wild rice. During the 2015 GLRI fiscal year, federal agencies and their partners restored and protected a total of 1,132 acres of wild rice habitat in Fond du Lac waters.